Arguing the point: Should large-scale power projects have a future under the CDM?

Michaelowa, Axel ; Lazarus, Michael

Other titles: Streitgespräch: Sollten große Stromprojekte vom CDM ausgeschlossen werden?

Originally published at:
Michaelowa, Axel; Lazarus, Michael (2013). Arguing the point: Should large-scale power projects have a future under the CDM? Carbon Mechanisms Review, 1:13-17.

Arguing the Point:

Should Large-Scale Power Projects Have a Future under the CDM?

A debate by Axel Michaelowa (University of Zurich/Perspectives)
and Michael Lazarus (Stockholm Environment Institute)

Large-scale infrastructure and power plant CDM projects have long attracted criticism. Examples include large hydropower projects and investment in more efficient coal-fired power stations. There is dispute – not least on the CDM Executive Board itself – whether such projects can reliably demonstrate additionality. Given the size of the funding involved, plant lifetime and the small impact on the projects' rate of return, many commentators question if CDM can really be the key break-even factor.

Against this backdrop, we invited two highly regarded CDM experts to set out their stance on whether large-scale power projects should be generally excluded from the CDM. Both authors have advised the High Level Panel with expert reports.

Dr. Axel Michaelowa has worked in international climate policy since 1994. He combines research and practice, the former at the University of Zurich and the latter at Perspectives, a consultancy launched in 2003. He has worked on a large number of approved CDM methodologies and has been a member of the CDM Executive Board's Registration and Issuance Team.

Axel Michaelowa

Do not throw out the child with the bathwater!

The recent tendency of industrialized countries to fight against large-scale project types in the CDM is disturbing. First credits from industrial gas projects were banned in all relevant jurisdictions. Now large power projects are targeted. Arguments are no longer as simple as in the context of the industrial gas projects where the perverse incentive to increase production in developing countries to the detriment of production in industrialized countries was the major issue. NGO representatives say that fossil power plant projects in the CDM lead to a perpetuation of emissions from the power sector. A recent policy brief by Michael Lazarus, Pete Erickson and Randall Spalding-Fecher argues that additionality of large projects is generally difficult to demonstrate. I disagree. If policymakers were willing to apply the same criteria that banks apply to loan requests, they could objectively differentiate between business-as-usual projects and those projects mobilized by the revenue from CER sales. Here the key issue is the assumed price of CERs. Under the current rock-bottom prices, no new project can seriously claim additionality, as revenue after deduction of transaction costs is close to zero. But in the past, when the majority of CDM projects was planned, developers expected prices ranging between 4 and 20 g/CER, which were then frequently fixed in forward purchase contracts. At such prices, CER revenues could make a difference, and have so in a number of countries. The generic argument that the change in the internal rate of return has to surpass a specific threshold also does not take into account that entrepreneurs do react on small incentives, if they are able to hedge for variations in other relevant parameters.

Michael's claim that all large power projects should be excluded also does not take into account that attractiveness of renewable energy projects strongly depends on site characteristics. The CDM should have the purpose to mobilize projects that are not commercially attractive on their own. Hydro projects in areas with variable rainfall or wind projects with a low average wind-speed should not be compared with projects in hugely attractive sites. Likewise biomass power projects in areas with high prices for biomass residues cannot be compared with those that get residues for free.

Instead of banning large power projects in general, a much more urgent problem that policy-makers need to resolve is the question whether lavish renewable energy subsidies should continue to be ignored in the additionality assessments. Their exclusion was sensible in the early days of the carbon market when only a small number of countries had renewable energy subsidies. Then, it could be rightly feared that the risk to lose CER revenues would lead to a delay in introducing renewable energy support policies. Now, as many countries have such policies in place and have reaped CER revenues, the situation has changed. I would propose to no longer exempt support policies from the additionality assessment five years after their introduction. India and China having policies in place for many years can easily be "weaned off" the CER subsidy. Then, the majority of problematic cases would vanish in one go.

We need to have a clear view: either we want the market mechanisms like the CDM to drive large-scale mitigation, or they will become irrelevant. This cannot be achieved if we throw out all project types that achieve large-scale mitigation. A differentiated approach is needed. Only then markets can really mobilize the lowest cost reductions.

Michael Lazarus

Or to invoke a rather different idiom (and image), perhaps large-scale power projects have become the elephant in the CDM room. For years,

Maybe this kid has become too big for the bathtub!

researchers have expressed concerns about the additionality of large, new, wind, hydro, natural gas, and coal projects, while policy makers have been reluctant to systematically address them. Analysts have shown that CDM revenues, even in good times, typically have a relatively small effect on the expected return of power sector projects (e.g., ~3% for wind and hydropower), often much smaller than normal fluctuations in other factors such as fuel prices or electricity tariffs. They have asserted that many power technologies in the CDM pipeline should be considered common practice, as their implementation is now widespread (e.g., hydroelectricity, wind, and higher-efficiency coal technologies). Furthermore, often, these technologies receive extensive government support in the form of feed-in-tariffs, other incentives, and mandates, designed to address local priorities such as energy security that are not taken into account in CDM decisions.

Last year, Pete Erickson, Randall Spalding-Fecher, and I conducted research that considered the extent to which the value and integrity of the CDM hinges upon the net emissions impact of these large-scale power supply projects If the large majority of these projects are additional and operate well beyond the credit issuance period, we found, they could lead to a net decrease in global greenhouse gas emissions. However, if they are mostly non-additional, as research has suggested , the use of CERs from these projects could increase global greenhouse gas emissions by over a gigaton of CO_2e, cumulatively through 2020. Furthermore, over this same period, it turns out that the effective

Michael Lazarus
has over 20 years of professional experience in energy and environmental analysis. His research focuses on energy and climate change policy, carbon markets and offsets, and state and local climate change initiatives in the United States. He has been involved in developing a large number of CDM methodologies and from 2002 to 2007 was a member of the CDM Methodology Panel.

functioning of the CDM is at risk because of an excess supply of CERs of a similar magnitude.

In an SEI policy brief, we proposed a simple solution: transitioning the CDM away from large-scale power supply projects. We argued that moving away from large-scale CDM projects could not only improve the CDM's overall mitigation impact, it could help address the over-supply of certified emission reductions (CERs), support projects that truly depend on CERs, and provide the opportunity to focus on more effective support mechanisms for lower-carbon power in the developing world (supported NAMAs and scaled-up crediting and trading mechanisms, for example).

"Transitioning away from large-scale CDM projects could help address the over-supply of CERs" M. Lazarus

We have cautioned that such a transition would need to be carefully considered, bearing in mind governance and legal aspects and the need for maintaining investor confidence. Nonetheless, we feel that the time is right to give this idea serious consideration. The CDM is undergoing some seriously soul-searching. And new market mechanisms are being asked not merely to deliver efficiency and environmentally integrity, but a net decrease in global GHG emissions as well.

What about other remedies? As for additionality, one could seek further improvements to additionality tests, such as the greater use of standardized methods or better investment additionality tests that consider the impact of CER revenues, as Axel suggests. However, these ideas have been around for as long as the CDM, and have yet to succeed for several fundamental reasons (low signal-to-noise ratios, information assymetries, and so on). A differentiated approach that identifies specific conditions in which the CDM is more likely to be a decisive factor for large-scale power project, as Axel suggests, might work, but such an approach is difficult to develop, defend, and approve. Changing the treatment of domestic subsidy policies in additionality assessment, as Axel also suggests, could be a double-edged sword that dissuades positive domestic policies in countries other than China and India and in sectors other than power. As for addressing the excess supply of CERs, some have recommended using a fund to buy and then cancel CERs. However, this remedy would be costly, could divert climate finance from other mitigation or adaptation activities, and would not address fundamental risks to environmental integrity.

Transitioning away from large-scale power projects in the CDM would not require new finance, or divert existing flows. It would help steer investment to project types with more certain additionality, including some that could actually help achieve a net decrease in global emissions through application of a discount or other mechanism. The phase-out of large power sector projects could be implemented by either CDM administrators (EB/CMP) and through a coordinated effort among major buyer-country governments, and in a manner that leaves large-scale power supply CERs that are already issued and held by actors in the carbon market in play.

I understand the discomfort with the suggestion to consider moving away from project types that are expected to generate the majority of CERs going forward. I have played a key role in developing the CDM methodology that underlies most of them (ACM0002 and its offspring), and thus feel some responsibility for the issues it has created. Indeed, as Axel suggests, there are bright spots –many power projects that, most likely, the CDM has helped bring to the market – though for CDM to work as intended these would have to be rule not the exceptions. Furthermore, CDM in the power sector has helped to create institutions and human capacities that can have lasting value in a transition to low-carbon power systems. But it is time to

1 For further discussion of this research, as well as the fuller rationale behind our findings and recommendations, see our policy brief http://sei-us.org/publications/id/468 as well as the underlying analysis in Chapter 4 of the CDM Policy Dialogue report, Assessing the Impact of the CDM http://www.cdmpolicydialogue.org/research/1030_impact.pdf

take stock of these successes, and as the CDM High Level Panel has suggested, time to "graduate" some project types from the CDM. After a decade, without confidence that a large majority of large-scale CDM power projects are additional, they should be considered next in line for graduation to other policy mechanisms that can be more ambitious, efficient, and effective.

Axel Michaelowa

Michael puts his finger on relevant challenges of the CDM market. It is clear that at low CER prices it is difficult to assess whether the CER revenue has mobilized a project or not. But this is a problem which is due to the lack of political will to set stringent emissions targets and to allow CERs to contribute towards those targets. Low signal to noise ratios are not a design problem of the CDM. At a price of 50 g/CER, it would be easy to separate black and white sheep. At 50 cents/CER, it is of course virtually impossible! I agree with Michael that a CER stabilization fund is not a viable remedy as it would generate a short-term price spike that would eventually fade unless sustainable CER demand is generated.

Give project-based market mechanisms the chance to work!

I think that information asymmetries can be tackled in the assessment of additionality. If banks are able to find out which projects are promising and which ones are not, regulators should also be able to do so. This of course would mean that validations – which have already substantially improved – need to improve further. This would require clear liability for wrong validations. The World Bank's push to do away with validation, which has been endorsed by a number of governments would lead us down the wrong road.

I agree with Michael that a reform of the CDM to contribute to global emission reductions is necessary, as we cannot continue to generate 100% offsets if we want to reach emissions paths compatible with the 2°C target. Discounting of CERs, ideally linked to the degree of development of the host country would be an ideal means to generate such reductions, and incentivize taking up commitments. This would allow us to "wean countries off" the CDM in an objective and transparent procedure. The solution which I propose regarding treating renewable energy subsidies in the additionality test would fit neatly into this strategy, as it makes clear that countries cannot expect to generate CER revenues forever.

In the medium term, we should see a coexistence of the CDM with new, more highly aggregated market mechanisms. The key outcome should be that project-based mechanisms do not prevent graduation of host countries to take up emission caps. I hope that within the next decade all mitigation possibilities that can be envisaged are mobilized by one of the market mechanisms, and that no options are excluded ex ante.